February 11, 1960

Dr Richard Davies
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Dear Dick:

I would not press you to come to the 2/29 session, except as an observer on behalf of JPL, who might be concerned to meet "Committee 11". Derbyshire has raised some additional matters for the agenda; you will have received them as SSB-139. If NASA is going to be unresponsive to SSB recommendations, we really are being led by the nose: what would all this be about then?

Re back-contamination, Norm also feels that this might have been overstated. Ithink he is right that we should stress a positive approach, that perhaps our main scientific objective should be the detailed study of planetary samples with the resources of the terrestrial laboratory. And I would stress this. But I think there have to be qualifications in the immediate program and a considerable part of our effort in the next ten years' flights should be directed at the safeguards that will be necessary before we can preclude back-contamination as a hazard. If I disagree with Norm it is in the a priori expectation that this can be a hazard, which I feel is quite high if there is any microbial life at all. But I will keep your political cautions in mind, and certainly will try to avoid any basis for negative thinking. I am rather afraid of the space-adventure menaality that would push manned exploration as an end-in-itself, as Mercury is doing, and feel this may give too much impetus to planetary missions whose scientific objectives have not been thought out; you are afraid that too much pressure to hew a narrow line may discourage planetology altogether, but this seems almost an incredible possibility. If SSB-139 is to be believed, NASA has already established a planetary goal as policy; I will certainly do all possible to discourage any diversion from this, but I do feel we have to lay out what we have to do.

Phillips has also, already, brought up back-contamination and I do not think it will be forgotten if merely not discussed. It does furnish another valid and pressing motivation to insist on early development of exobiological experiments.

I would be glad to sit in on any sessions you might happen to hold around here, but doubt I can make any more trips. You probably would want to have your meeting at JPL, and I'm just not sure now whether I could break away.

I've submitted a preliminary application to NASA (Newell) for about $40,000 in fiscal 1961 to get started on the planetary microscope system. I did stress the importance of our working closely with JPL on this, particularly in its later stages. We have $10,000 in preliminary money from Rockefeller and will soon be setting up an elementary TV-microscope chain with UV sensitivity. We do need definite guidanne from you on picture-taking and -transmission capabilities, and I would appreciate any information you can collect on these. If clearance is necessary, I think you can get some help from the SSB secretariat; please also let me know quite explicitly what I can pass on to the various people helping me as background for the problem.

You have mentioned a special vidicon several times, one you were playing with for spacecraft installation. Is this the Lockheed solid-state device, or do you have something else up your sleeves?

An important element of our program will be the calculated degradation of our images, with noise and with limits on resolutéon and contrast. Perhaps the cheapest way to go after this is to use a simulator that RCA had developed, and which has been used by Harry Wexler for his studies on cloud-cover-sensing. This will take a photographic negative and produce TV images with known degradation. Do you have such a device at JPL, or do you know of any on the West Coast? Or should you not be setting one up in any case if you are going into photography.

The papers carried a story last week on CBS' "Photoscan" for high resolution pictures. Is there anything in this for us?

Our staff so far is one 5th year EE student, a few hours a week. Such is the American program in exobiology.

Yours,

Joshua Lederberg